ENVIRONMENTAL CHEMISTS

Date of Report: 11/01/12 Date Received: 10/19/12

Project: 1198001.010.011, PO M09475, F&BI 210321

Date Extracted: 10/22/12 Date Analyzed: 10/30/12

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Sample Extracts Passed Through a Silica Gel Column Prior to Analysis

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C ₁₀ -C ₂₅)	Motor Oil Range (C ₂₅ -C ₃₆)	Surrogate (% Recovery) (Limit 51-134)
CB330001-101912 210321-01	<50	<250	88
CB331707-101912 210321-02	<50	<250	97
Method Blank 02-1913 MB	<50	<250	80

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: CB330001-101912

Date Received: 10/19/12

Date Extracted: 10/23/12

Date Analyzed: 10/23/12

Matrix: Water
Units: ug/L (ppb)

 Client:
 Landau Associates

 Project:
 1198001.010.011, F&BI 210321

 Lab ID:
 210321-01

 Data File:
 210321-01.034

 Instrument:
 ICPMS1

Instrument: ICPI
Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Germanium 105 60 125 Holmium 94 60 125

Concentration
Analyte: ug/L (ppb)

Copper 35.4
Zinc 38.8
Lead 1.77

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: CB331707-101912

Date Received: 10/19/12

Date Extracted: 10/23/12

Date Analyzed: 10/23/12

Matrix: Water
Units: ug/L (ppb)

2 Data File:
Instrumer
pb) Operator:

Client: Landau Associates

Project: 1198001.010.011, F&BI 210321

 Lab ID:
 210321-02

 Data File:
 210321-02.035

 Instrument:
 ICPMS1

 Operator:
 AP

 Internal Standard:
 % Recovery:
 Limit:
 Limit:

 Germanium
 105
 60
 125

 Holmium
 95
 60
 125

Analyte: Concentration ug/L (ppb)

 Copper
 55.5

 Zinc
 1,160

 Lead
 1.21

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: Method Blank Date Received: Not Applicable Date Extracted: 10/23/12

Date Analyzed: Matrix: Units:

10/23/12 Water

ug/L (ppb)

Client: Project: Landau Associates

1198001.010.011, F&BI 210321 I2-720 mb

Lab ID: Data File: Instrument:

Operator:

I2-720 mb.023 ICPMS1

AP

Internal Standard: Germanium

% Recovery: 106 100

Lower Limit: 60 60

Upper Limit: 125 125

Concentration ug/L (ppb)

Analyte:

Holmium

Copper Zinc Lead

<5 <1 <1

ENVIRONMENTAL CHEMISTS

Date of Report: 11/01/12 Date Received: 10/19/12

Project: 1198001.010.011, PO M09475, F&BI 210321

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

 ${\bf Laboratory\ Control\ Sample\ Silica\ Gel}$

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	121	139 vo	58-134	14

ENVIRONMENTAL CHEMISTS

Date of Report: 11/01/12 Date Received: 10/19/12

Project: 1198001.010.011, PO M09475, F&BI 210321

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 210318-09 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Copper	ug/L (ppb)	20	<5	105	112	52-134	6
Zinc	ug/L (ppb)	50	26.5	101 b	110 b	51-142	9 b
Lead	ug/L (ppb)	10	<1	97	104	85-115	7

Laboratory Code: Laboratory Control Sample

	Percent										
	Reporting	Spike	Recovery	Acceptance							
_Analyte	Units	Level	LCS	Criteria							
Copper	ug/L (ppb)	20	94	81-120							
Zinc	ug/L (ppb)	50	95	82-120							
Lead	ug/L (ppb)	10	88	84-120							

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- A1 More than one compound of similar molecule structure was identified with equal probability.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte indicated may be due to carryover from previous sample injections.
- d The sample was diluted. Detection limits may be raised due to dilution.
- ds The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.
- dv Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.
- fb Analyte present in the blank and the sample.
- fc The compound is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.
- ht Analysis performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j The result is below normal reporting limits. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.
- jr The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the compound indicated is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received in a container not approved by the method. The value reported should be considered an estimate.
- pr The sample was received with incorrect preservation. The value reported should be considered an estimate.
- ve Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



	Seattle/Edmonds	(425) 778-0907
,	☐ Tacoma (253) 026.	2403

] Spokane (509) 327-9737	
Dertland (503) 542-1080	

Please Bill Alaskan Copper	ME
Please Bill Hastan Coffer P.O. # MØ9475	

•	ME 10/1	9/12	10/10	1/12	AT3
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Chain-of-Custody Record

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Project Location/Event 4912 Sampler's Name Loseway	trim	mer	7	e talma		,	/¥	\v	X/	/	/ /	//	//		/	///
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Send Results To TRVV Thom	sm, To	ekalmar	Losev	ary Trim	ne	2	$\langle \psi \rangle$	× /	' /	/	//	' /	/	/	//	
Sample I.D.	Date	Time		No. of Containers		3//		/	/ ,	/		/ /	/ /	/ /	/_	Observations/Comments
C6330001-101912				Z Z		$\frac{1}{2}$	\square	+	1	7	7	+	1	+	01	X Allow water samples to settle, collect
C6381707-101912	Tolkir	11:05	1120	2	Ŕ	X		1	T	7	T		Ť		A.B	aliquot from clear portion
						1										X NWTPH-Dx - run acid wash/silica gel cleanup
3 - 19-38 19-38 - 19-38 - 19-38 - 19-38 - 19-38 - 19-38 - 19-38 - 19-38 - 19-38 - 19-38 - 19-38 - 19-38 -				<u> </u>		-		_	4	4	4	-	+	- -		7 7
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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Bradley T. Benson, B.S. Kurt Johnson, B.S.

3012 16th Avenue West Seattle, WA 98119-2029 TEL: (206) 285-8282 e-mail: fbi@isomedia.com

November 1, 2012

Joe Kalmer, Project Manager Landau Associates 130 2nd Ave. S. Edmonds, WA 98020

Dear Mr. Kalmer:

Included are the results from the testing of material submitted on October 19, 2012 from the 1198001.010.011, PO M09475, F&BI 210321 project. There are 7 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Matthew Langston Project Manager

Enclosures NAA1101R.DOC